UNITED STATES PATENT AND TRADEMARK OFFICE

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EXAMINER
NGUYEN, LEON VIET Q

ART UNIT	PAPER NUMBER
2611	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _16 February 2007_.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-9_ is/are pending in the application.
     4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) _1-9_ is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on _08 February 2006_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
     a)☒ All   b)☐ Some * c)☐ None of:
       1.☐ Certified copies of the priority documents have been received.
       2.☐ Certified copies of the priority documents have been received in Application No. _____.
       3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date _2/16/07_.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1.   Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which

papers have been placed of record in the file.

Information Disclosure Statement

2.   The information disclosure statement (IDS) submitted on 2/16/07 was filed after

the mailing date of 2/16/07. The submission is in compliance with the provisions of 37

CFR 1.97. Accordingly, the information disclosure statement is being considered by the

examiner.

Claim Objections

3.   Claims 1-4 and 6 objected to because of the following informalities:

        a.   The method claims should contain present progressive tense verbs ending

        in -ing.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 1, 2, 5, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over the background of applicant's specification (hereby referred to as the background) in view of Park (GB2331207A).

Re claim 1, the background teaches a method for encrypting a digital data stream in a transmission system that uses codes for the modulation, wherein a kth transmitter (fig. 1) constructs a kth connection (page 1 lines 19-20) for the kth digital data stream (page 1 lines 19-20), for the encryption, the digital data stream of the transmitter ($D^{(k)}$ in fig. 1) is mixed (the mixer in fig. 1, page 1 lines 19-21) with a spreading code that is assigned to this k^{th} connection ($c^{(k)}$ in fig. 1), different spreading codes from a defined set are assigned (vector (2), page 2 lines 9-12) and through the mixing a transmission signal is produced ($s^{(k)}$ in fig. 1, page 1 lines 21-24).

The background fails to teach where the codes used for modulation are orthogonal and that the degree of encryption of the kth digital data stream is increased during the kth connection through the allocation of a sequence for the application of the different spreading codes and/or a hop interval. However Park teaches using orthogonal codes for modulation (page 3 lines 1-4) and increasing the degree of encryption of the digital data stream (page 4 lines 4-6) through the allocation of a sequence for the application of the different spreading codes (page 3 lines 1-4, page 4 lines 4-6) and/or a hop interval (page 3 lines 1-4).

Therefore taking the combined teachings of the background and Park as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the steps of Park into the method of the background.

The motivation to combine Park and the background would be to provide greater

security of the encrypted data (page 4 lines 4-6 of Park).

Re claim 2, the modified invention of the background teaches a method

characterized in that a permutation function (page 3 lines 1-4 of Park, the hopping

pattern) defines the sequence of the application of the content of a set of spreading

codes (page 3 lines 1-4 of Park, the orthogonal codes) by stating the position (fig. 4 of

Park, since there is a finite set of orthogonal codes it would be obvious to state the

position of each code).

Re claim 5, the modified invention of the background teaches a device for

carrying out a method as claimed in claim 1 (fig. 1 of the background), characterized in

that the device has a first code generator (page 3 lines 1-4 of Park, the first hopping

orthogonal code generator) that creates the respectively current spreading code (page 3

lines 1-4 of Park, orthogonal codes).

Re claim 9, the modified invention of the background teaches use of one of the

methods mentioned above (assumed to be the method as claimed in claim 1) in a

cordless or line-based network (page 1 line 13-14 of the background).

3.   **Claim 3 rejected under 35 U.S.C. 103(a) as being unpatentable over Park**

(GB2331207A) in view of the background of applicant's specification (hereby

referred to as the background).

Re claim 3, Park teaches method for encrypting a digital data stream that is to be

transmitted (page 4 lines 4-6), characterized by the steps:

communication of an encryption key (encryption keys are well known in the art

and widely used in wireless communications) and thus:

establishment of a permutation function (page 3 lines 1-4, the hopping pattern),

establishment of a set of spreading codes (page 3 lines 1-4, the orthogonal

codes),

and/or establishment of a hop interval,

wherein the last three steps mentioned can be carried out in any order (it would

be obvious to perform the steps above).

Park fails to teach wherein after the connection set-up, necessary parameters for

the transmission and recovery are transmitted. However the background teaches

establishment of spreading codes after connection start-up (page 2 lines 7-8). The

spreading codes are interpreted to be necessary parameters. The background also

teaches that the transmitted data is encoded with the spreading codes (page 2 lines 9-

12).

Therefore taking the combined teachings of Park and the background as a whole, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the steps of the background into the method of Park. The motivation to combine the background and Park would be to ensure that transmitted data can be decoded only by the authorized recipient (page 2 lines 10-12 of the background), thus ensuring proper security.

4.   **Claims 4 and 6-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bantz et al (US5394433) in view of Park (GB2331207A).**

Re claim 4, Bantz teaches a method for encrypting a digital data stream, characterized by the execution of a first permutation procedure which contains a loop with the following steps:

setting of an interval to "1" (block 194 in fig. 16, the starting value of the interval is considered arbitrary);

waiting for the end of a predefined hop interval (block 198 in fig. 16);

increasing the interval by the value 1 (block 208 in fig. 16);

carrying out a comparison (block 210 in fig. 16), wherein alternatively the following takes place:

if the comparison has a positive result (block 210 in fig. 16, i != J): resetting of the interval to "1" (the loop resets after block 204 to set i=0. The starting value of the interval is considered arbitrary);

if the comparison has a negative result (block 210 in fig. 16, i=J): equating the

current spreading code with the spreading code that stands at the position stipulated by

the permutation function (212 in fig. 16, col. 14 lines 62-64. The hopping patterns are

related to spreading codes).

Bantz fails to teach whether the current value of the interval is greater than the

total number of the elements of a permutation function which states the positions of the

spreading code of a set of spreading codes that is to be used for encrypting the digital

data stream. However Park teaches elements of a permutation function (page 3 lines 1-

4 of Park, the hopping pattern) which states the positions of the spreading code of a set

of spreading codes fig. 4 of Park, since there is a finite set of orthogonal codes it would

be obvious to state the position of each code). One of ordinary skill in the art would

have found it obvious to use this comparison in block 210 of fig. 16 as taught by Bantz.

Furthermore the loop implementation is one of a plurality of design options one skilled in

the art could choose from when seeking to implement a method to sequentially apply

the spreading codes according to the given permutation function.

Therefore taking the combined teachings of Bantz and Park as a whole, it would

have been obvious to one of ordinary skill in the art at the time the invention was made

to incorporate the steps of Park into the method of Bantz. The motivation to combine

Park and Bantz would be to provide greater security of the encrypted data (page 4 lines

4-6 of Park).

Re claim 6, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claim 4. It would be obvious and necessary to have a method of decoding the encoded digital data stream of claim 4.

Re claim 7, the modified invention of Bantz teaches a device for carrying out a method as claimed in claim 6, characterized in that the device has a second code generator that produces the current spreading code (element 40 in fig. 2B of Park).

Re claim 8, all of the claim limitations as recited have been analyzed and addressed in the above rejections with respect to claims 4 and 6. It would be obvious and necessary to have a system to perform the method as claimed in claims 4 and 6.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEON-VIET Q. NGUYEN whose telephone number is (571)270-1185. The examiner can normally be reached on monday-friday, alternate friday off, 7:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, David C. Payne can be reached on 571-272-3024. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Leon-Viet Q Nguyen/
Examiner, Art Unit 2611

/David C. Payne/
Supervisory Patent Examiner, Art Unit 2611